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Factors Associated with Relapse among Clients in Australian Substance Disorder

Treatment Facilities

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Abstract

Factors associated with relapse to problematic alcohol or illicit drug use were examined in 104 clients enrolled in treatment programs for substance disorders. Participants were assessed by retrospective self-report questionnaires to explore the roles of family dysfunction, mood states, primary drug of dependence, demographic variables and various other factors in relation to relapse episodes. Consistent with previous studies, the most commonly cited reason for relapse was negative mood states, followed by external pressure to use, desire for positive mood states, and social/family problems. Reasons for relapse did not differ between clients whose primary drug of dependence was heroin, methamphetamine or alcohol. Methamphetamine abusers and participants in the drug court program had the fewest relapses. Comorbid psychological disorders were most commonly diagnosed in the alcoholic group, followed by the methamphetamine group and the heroin group. General family functioning retrospectively improved from time of last relapse to time of testing. Results are consistent with previous work and suggest that relapse factors are remarkably similar across different types of drug dependence.

KEYWORDS: Addiction, relapse, family functioning

Introduction and Background

Drug abuse is an ongoing problem in Australia with substantial costs to Australian society. Collins and Lapsley (2002) estimated that the total societal cost of drug abuse in Australia during 1998-9 was \$34.4 billion. Of this amount, alcohol accounted for approximately \$7.6 billion and illicit drugs \$6.1 billion; the remainder was attributed to tobacco. Such alarming statistics emphasize the importance of providing adequate treatment services for those suffering from substance disorders. Despite advances in treatment, client compliance is generally poor, with relapse to problematic drug/alcohol use a common occurrence (Rotgers, Keller, and Morgenstern, 1996).

Reasons cited by addicts for their relapses are diverse and include depression, anxiety, positive mood, social pressure, adverse life events, work stress, and marital conflict (Billings and Moos, 1983; Cummings, Gordon, and Marlatt, 1980; Litman, Stapleton, and Oppenheim, 1983). Although craving has been emphasized in theories of addiction, it is not commonly cited by addicts as a cause of relapse (Bradley, Phillips, Green, and Gossop, 1989; Littman et al.; Marlatt, 1978; Wallace, 1989). Marlatt and Gordon (1985) categorized risk factors for relapse into negative and positive emotional states, urges, temptations, relationship conflicts, and social pressure to use. They also highlighted the importance of coping skills in mediating between risk factors and relapse. Family dysfunction and low social support have also been implicated as relapse factors in a number of studies (Finney, 1995; Hser, Grella, Hsieh, Anglin, and Brown, 1999; Mankowski, Humphreys, and Moos, 2001; McMahon, 2001; Morgenstern, Labouvie, McGrady, Kahler, and Frey, 1997).

The present study sought to ascertain the main reasons cited for relapse in an Australian treatment sample and whether these reasons varied as a function of drug

and demographic variables. For the purposes of the present study, a relapse was rather strictly defined as a return to substance abuse that resulted in seeking further treatment following a previous course of treatment and abstinence.

Method

Participants

The participants were 104 (59 male and 45 female) Caucasian clients over 18 years of age ($M = 31.82$ years, $SD = 9.2$, range 18-55) who were admitted into drug/alcohol treatment facilities in southeast Queensland between November 2002 and March 2003. Of the five facilities, Mirikai and Goldbridge use a Therapeutic Community (TC) approach in treating substance abuse. Residents in a TC receive specialised treatment from professional counselors. The main purpose of the TC model is to foster personal growth by providing opportunities for individuals to examine and change their lifestyle, attitudes and behaviours through a community of concerned people working together to help and support each other. All members in the TC have the opportunity to contribute to running the TC, to share in the decision making where appropriate and to act as positive role models for other community members. Another facility, Palm Beach-Currumbin Clinic, is a private hospital with inpatient and outpatient drug treatment services. The Clinic is dedicated to the delivery of a high standard of professional psychiatric care to meet the needs of those who are suffering from a broad range of emotional, psychological and substance use disorders. The aim of treatment is to assist patients to overcome any personal difficulties and achieve a balanced healthy lifestyle. The two remaining substance abuse treatment facilities accessed in this study, Fairhaven-Salvation Army and Logan House, provide long-term residential treatment for alcohol and drug problems. Work therapy and training, as well as training in lifestyle skills, are central aspects of these

programs. Logan House additionally offers Cognitive Behavioural Therapy (CBT). All treatment facilities were sent an information pack that included a letter providing details of the aims and procedures of the study and a copy of all questionnaires. In each instance, either the director of the facility or the director of therapeutic services signed a permission form to allow the study to proceed. To participate in the project, all participants must have reported that they had experienced at least one episode of relapse which occurred more than one month prior to the study, and which resulted in them seeking further treatment. No payment was given to the participants.

The majority of clients in the sample (63%) reported being single, 22% were separated/divorced, and 13% were in a current relationship (married/de facto/ girlfriend or boyfriend). Just under half (48.1%) reported having children. The mean age of first drinking alcohol was 14.58 years ($SD = 3.9$). The mean age of first using illicit drugs was 15.56 years ($SD = 3.1$), with 13.4% ($n = 14$) reporting they had never used illicit drugs. Participants averaged 13.39 years ($SD = 8.1$) of drug/alcohol dependency with a mean current length of time in treatment of 11.83 weeks ($SD = 9.4$). Participants reported a relatively small number of previous relapses ($M = 3.01$, $SD = 2.1$), strictly defined as a return to substance abuse that resulted in seeking further treatment. The most frequently reported primary drug of dependence was methamphetamine (41.3%), followed by alcohol (31.7%), heroin (22.1%), and cannabis (4.8%). A large proportion of participants (60.6%) reported they had a drug related criminal record, with 21.2% reporting they were a current participant in the drug court program and 53.8% reporting involvement in criminal activity¹ at the time of their latest relapse. Just over half (52.9%) reported that they had been diagnosed with a psychological disorder during their current treatment, with the most common

¹ Criminal activity is defined here as involvement in any illegal activity other than just the use of illegal drugs. Common types of criminal activity include break and entering, armed robbery, drug dealing and drug trafficking.

diagnosis being depression (77.2%), followed by drug-induced psychoses (10.5%), schizophrenia and related psychotic disorders (5.3%), and “other” (7.8%). About half of those diagnosed reported having the disorder at the time of their latest relapse; of those, 26.9% were on medication for their disorder at the time of the relapse. The study was approved by the Bond University Human Research Ethics Committee prior to data collection.

Procedure

With the exception of clients from Palm Beach-Currumbin Clinic, the residents were called together for a group meeting arranged by staff and informed that the study was assessing factors associated with relapse. An envelope containing an explanatory statement plus three questionnaires was distributed to each of the residents. The residents were given instructions on how to fill out the questionnaires, with specific instruction not to write their names anywhere on the questionnaires or the envelope to ensure their anonymity. The residents were reminded that participation was purely on a voluntary basis and no payment or incentive was going to be given. They were told the staff would receive a copy of the completed report which would be available to them. Return of the questionnaires sealed in the envelope was taken to signify informed consent. With the exception of Palm Beach-Currumbin Clinic, a locked box was left at each facility for a period of up to seven days for those who wished to participate to deposit the completed questionnaires sealed in the provided envelope.

The procedure at Palm Beach-Currumbin Clinic was slightly different in order to satisfy their confidentiality requirements. The senior Psychologist informed the clients that the study was assessing a range of factors associated with relapse, and

distributed the envelopes. Those who chose to participate returned the sealed envelopes to the senior Psychologist, who then forwarded them on to the researchers.

Measures

The participants completed a demographics questionnaire plus two psychological scales. The demographics questionnaire contained basic items such as “marital status” and “gender” as well as questions such as “do you have a criminal record?” and “what do you believe is the main reason for your relapse?” with relapse defined as a return to substance abuse that resulted in seeking further treatment. For the latter question a number of response options were listed that fit into four categories: negative mood states (eg., “depression,” “anxiety”), desire for positive mood states (eg., “wanted to party,” “felt like getting high”), social/family problems (eg., “little or no social support,” “social isolation”), and external pressure to use (eg., “peer pressure,” “dealing drugs”). After completing the demographics questionnaire, the participants completed the Family Assessment Device General Functioning (GF) Scale (Epstein, Baldwin, and Bishop, 1983). The GF Scale’s 12 items assess family relationships (“we don’t get along well together”), communication (“we avoid discussing our fears and concerns”), and problem solving (“we are able to make decisions about how to solve problems”) on a four point Likert scale (“strongly disagree” to “strongly agree”). Appropriate items are reversed such that higher scores indicate worse family functioning. The GF Scale was designed as an overall measure of the health/pathology of a family, and shows high internal consistency and test-retest reliability (Byles, Byrne, Boyle, and Offord, 1988). Participants also completed the Depression Anxiety Stress Scale 21 (DASS 21; Lovibond and Lovibond, 1995), a shortened version of the original DASS 42. The DASS has three subscales,

Depression, Anxiety, and Stress, each of which has high internal consistency and test-retest reliability (Brown, Chorpita, Korotitsch and Barlow, 1997).

Participants completed the GF Scale and the DASS 21 twice. The first time the participants completed each questionnaire, they were instructed to answer the questions according to how they felt at the present time. When completing each questionnaire the second time, the participants were instructed to retrospectively complete the questionnaires in relation to how they felt at the time of their most recent relapse. Retrospective responding has the potential for selectivity in recall, however, for purposes of the present study, retrospective questioning was chosen due to the impracticality of recruiting and testing substance abusers who are currently relapsing and under the influence of mind altering substances. Further, given that the sample population was in treatment, and through the therapy process had presumably gained awareness and insight into their dependence, they were considered to be reasonably likely to make accurate retrospective judgments about their most recent relapse.

Results

A two-way mixed multivariate analysis of variance (MANOVA), with primary drug of dependence (alcohol, methamphetamine, heroin) as the between-subjects factor and time (relapse vs. present) as the within-subjects factor, was performed on the GF and DASS scores. The cannabis group was removed from this and all other analyses of primary drug of dependence because the sample ($n = 5$) was too small. Preliminary assumption testing was conducted to check for sample size, normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity, with no serious violations noted. There was a significant effect of time on the combined dependent variables, $F(4, 93) = 42.80$, $p = .0001$; partial $\eta^2 = .64$. Univariate results for the within subjects factor (time)

showed that all measures significantly differed from retrospectively assessed time of relapse to time of testing: GF, $F(1, 96) = 12.34, p = .0001$, partial $\eta^2 = .11$; DASS depression, $F(1, 96) = 130.06, p = .0001$, partial $\eta^2 = .57$; DASS anxiety, $F(1, 96) = 107.50, p = .0001$, partial $\eta^2 = .52$; and DASS stress, $F(1, 96) = 162.93, p = .0001$, partial $\eta^2 = .62$. Table 1 shows that all measures decreased from retrospectively assessed time of relapse to time of testing. There was no effect of primary drug of dependence on the dependent variables, and no interaction.

Insert Table 1 about here

Reasons Cited for Relapse

The most common type of reason given for relapse was negative mood states (61.5%), with far fewer subjects citing external pressures (17.3%), desire for positive mood states (12.5%), or social/family problems (8.7%). Chi-square analysis showed that these reasons did not differ between the alcoholic, heroin, and methamphetamine groups, $\chi^2(6, N = 99) = 3.86, n.s.$

Primary Drug of Dependence and Substance Use History

A one-way between-groups MANOVA was performed to investigate self-reported duration of drug dependency, age first started drinking alcohol, age first started using illicit drugs, and number of relapses in relation to primary drug of dependence. Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity, with no serious violations noted. There was a statistically significant effect of primary drug of dependence on the combined dependent variables, $F(8, 152) = 8.61, p < .0001$; partial $\eta^2 = .31$. Univariate

analysis was significant only for duration of drug dependency, $F(2, 79) = 20.81$, $p < .0001$, partial $\eta^2 = .34$. Alcoholics reported a significantly longer period of dependency ($M = 19.75$ years, $SD = 8.54$) than those whose primary drug of dependence was methamphetamine ($M = 10.43$ years, $SD = 5.04$) or heroin ($M = 9.86$ years, $SD = 3.31$).

Chi-square analyses were conducted to examine primary drug of dependence in relation to demographic variables. Groups differed on having a drug-related criminal record, $\chi^2(2, N = 99) = 27.02$, $p < .05$. Of those whose primary drug of dependence was heroin, 91.3% had a drug related criminal record, compared to 72.7% for methamphetamine and 27.3% for alcohol. Drug groups also differed on involvement in criminal activity at the time of their relapse, $\chi^2(2, N = 99) = 45.25$, $p < .05$. In the heroin group, 82.6% were involved in criminal activity (e.g., theft, drug dealing) at the time of their relapse, compared to 74.4% of the methamphetamine group and only 6.1% of alcoholics. Groups also differed on diagnosis of a mental disorder, $\chi^2(2, N = 99) = 7.16$, $p < .05$. Of alcoholics, 66.7% were diagnosed with a mental disorder, compared to 53.5% of the methamphetamine group and 30.4% of the heroin group. Relationship status (see Table 2) also varied across groups, $\chi^2(8, N = 99) = 40.85$, $p < .05$, with a far lower proportion of alcoholics describing themselves as single than in the other two groups.

A one-way between groups ANOVA was conducted to examine age in relation to primary drug of dependence. There was a statistically significant difference in age among the three groups, $F(2, 96) = 30.26$, $p < .0001$, partial $\eta^2 = .38$. Post-hoc comparisons using the Tukey HSD test indicated that alcoholics were significantly older ($M = 39.85$ years, $SD = 8.83$) than those whose primary drug of dependence was

methamphetamine ($\underline{M} = 27.81$ years, $\underline{SD} = 5.35$) or heroin ($\underline{M} = 28.43$ years, $\underline{SD} = 7.32$).

Insert Table 2 about here

Number of Relapses in Relation to Primary Drug of Dependence

A one-way between groups ANOVA was conducted to examine the number of relapses in relation to primary drug of dependence. The distribution of scores for number of previous relapses was positively skewed, therefore square root transformation of the data was required; untransformed data are presented here for ease of interpretation. There was a statistically significant difference in number of relapses between the three groups, $F(2, 96) = 5.9$, $p = .004$, partial $\eta^2 = .11$. Post-hoc comparisons using the Tukey HSD test indicated that alcoholics ($\underline{M} = 3.42$, $\underline{SD} = 3.09$) and heroin addicts ($\underline{M} = 4.13$, $\underline{SD} = 1.94$) had more previous relapses than did the methamphetamine group ($\underline{M} = 2.40$, $\underline{SD} = 2.22$).

Drug Court and Relapses

Of the methamphetamine group, 34.9% were current participants in the drug court program, compared to 30.4% of the heroin group. This difference was not significant. Clients in the drug court program had fewer relapses ($\underline{M} = 1.21$, $\underline{SD} = 0.64$) than those not in the drug court program ($\underline{M} = 1.73$, $\underline{SD} = 0.64$), $t(102) = 3.37$, $p = .001$, $\eta^2 = .13$.

Discussion

The most commonly cited reason for relapse was negative mood states, with far fewer clients citing external pressure to use, positive mood states, or social/family problems. This result was consistent with previous studies of relapse factors (e.g.,

McKay, 1999; McLellan and Alterman, 1994; Peters and Schonfeld, 1993). In the present study, reasons for relapse did not differ in relation to the primary drug of dependence (alcohol, methamphetamine, heroin), reflecting the commonality of relapse processes across diverse types of substances. Family dysfunction was expected to be related to relapse, based on previous reports (Moos, Bromet, Tsu, and Moos, 1979; Moos and Moos, 1984; Nurco, Blatchley, Hanlon, O'Grady, and McCarren, 1998). As expected, GF scores significantly decreased from the time of relapse to the time of testing, indicating that the level of family dysfunction decreased according to subjects' retrospective assessments. Self-reported levels of depression, anxiety, and stress were also found to have decreased from retrospective assessment of time of relapse to time of testing, consistent with clients' reports of negative mood states at the time of relapse.

Heroin addicts and alcoholics reported more relapses than did the methamphetamine group. Alcoholics tended to be older and reported a longer duration of dependence than both the heroin and methamphetamine groups, which were similar in age and duration of dependence. Illicit-drug abusing clients who were current participants in the drug court program reported fewer relapses than those who were not in the program, suggesting that clients in treatment due to legal pressure may have been less severely dependent compared to those who sought treatment on their own.

The proportion of the heroin group who had a drug related criminal record, and who were involved in criminal activity at the time of their relapse, was greater than in the methamphetamine group, which in turn was much higher than in the alcoholic group. Conversely, the proportion of alcoholics who had been diagnosed with a mental disorder was greater than the proportion in the methamphetamine group, which in turn was much higher than the proportion in the heroin group. Most

clients in the methamphetamine and heroin groups described themselves as single, whereas most alcoholics described themselves as separated, divorced, or in a married or de facto relationship. Groups did not differ on the age at which they first started drinking and (perhaps surprisingly) the age at which they first started using illicit drugs.

Despite the correlational, retrospective nature of the present study, the results are generally consistent with previous work indicating an association between relapse to substance abuse following treatment and negative mood states such as depression and anxiety. Present findings also suggest an association between family dysfunction and relapse; however, given that family problems were rarely cited as a cause of relapse, retrospective ratings of poor family functioning at the time of relapse may have simply reflected the response of family members to the substance abuser's relapse and/or negative mood. In any case, the present findings reinforce earlier work indicating that the processes underlying relapse are remarkably similar across diverse types of drug dependence.

References

- Billings, A.G., and Moos, R.H. (1983). Psychosocial process of recovery among alcoholics and their families: Implications for clinicians and program evaluations. **Addictive Behaviors** 8: 205-218.
- Bradley, B.P., Phillips, G., Green, L., and Gossop, M. (1989). Circumstances surrounding the initial lapse to opiate use following detoxification. **British Journal of Psychiatry** 154: 354-359.
- Brown, T.A., Chorpita, B.F., Korotitsch, W., and Barlow, D.H. (1997). Psychometric properties of the Depression Anxiety Stress Scales (DASS) in clinical samples. **Behaviour Research and Therapy** 35(1): 79-89.
- Byles, J., Byrne, C., Boyle, M.H., and Offord, D.R. (1988). Ontario Child Health Study: Reliability and validity of the General Functioning subscale of the McMaster Family Assessment Device. **Family Process** 27(1): 97-104.
- Collins, D.J., and Lapsley, H.M. (2002). **Counting the cost: estimates of the social costs of drug abuse in Australia in 1998-9 (National Drug Strategy Monograph Series No. 49)**. Commonwealth Department of Health and Ageing, Canberra.
- Cummings, C., Gordon, J.R., and Marlatt, G.A. (1980). Relapse: prevention and prediction. In W.R. Miller ed. **The addictive behaviours**. Pergamon, Oxford, 291-321.
- Epstein, N.B., Baldwin, L.M., and Bishop, D.S. (1983). The McMaster Family Assessment Device. **Journal of Marital and Family Therapy** 9: 171-180.
- Finney, J.W. (1995). Enhancing substance abuse treatment evaluations: Examining mediators and moderators of treatment effects. **Journal of Substance Abuse** 7: 135-150.

- Hser, Y.I., Grella, C. E., Hsieh, S., Anglin, M. D., and Brown, B. S. (1999). Prior treatment experience related to process and outcomes in DATOS. **Drug and Alcohol Dependence** 57: 137-150.
- Littman, G.K., Stapleton, J., and Oppenheim, A.N. (1983). Situations related to alcoholism relapse. **British Journal of Addiction** 78: 381-389.
- Lovibond, S.H. and Lovibond, P.F. (1995). **Manual for the Depression Anxiety Stress Scales (2nd. Edition.)**. Psychology Foundation, Sydney.
- Mankowski, E.S., Humphreys, K., and Moos, R.H. (2001). Individual and contextual predictors of involvement in twelve-step self-help groups after substance abuse treatment. **American Journal of Community Psychology** 29: 537-563.
- Marlatt, G.A. (1978) Craving for alcohol, loss of control and relapse: Cognitive behavioural analysis. In: Nathan, P.E., Marlatt, G.A., and Loberg, T. eds. **Alcoholism: new directions in behavioural research and treatment**. Plenum Press, New York, 271-314.
- Marlatt, G.A., and Gordon, J.R. (1985). **Relapse prevention: maintenance strategies in the treatment of addictive behaviors**. Guilford Press, New York.
- McKay, J.R. (1999). Studies of factors in relapse to alcohol, drug and nicotine use: A critical review of methodologies and findings. **Journal of Studies on Alcohol** 60(4): 566-578.
- McLellan, A.T., and Alterman, A.I. (1994). Similarity of outcome predictors across opiate, cocaine, and alcohol treatment. **Journal of Consulting and Clinical Psychology** 62(6): 1141-1159.
- McMahon, R.C. (2001). Personality, stress, and social support in cocaine relapse prediction. **Journal of Substance Abuse Treatment** 21(2): 77-84.

- Moos, R.H., Bromet, E., Tsu, V., and Moos, B. (1979). Family characteristics and the outcome of treatment for alcoholism. **Journal of Studies on Alcohol** 40(1): 78-88.
- Moos, R.H., and Moos, B. (1984). The process of recovery from alcoholism: Comparing functioning in families of alcoholic and matched control families. **Journal of Studies on Alcohol** 45(2): 111-118.
- Morgenstern, J., Labouvie, E., McGrady, B.S., Kahler, C.W., and Frey, R.M. (1997). Affiliation with Alcohol Anonymous after treatment: A study of its therapeutic effects and mechanisms of action. **Journal of Consulting and Clinical Psychology** 65: 768-777.
- Nurco, D.N., Blatchley, R.J., Hanlon, T.E., O'Grady, K.E., and McCarren, M. (1998). The family experiences of narcotic addicts and their subsequent parenting practices. **American Journal of Drug and Alcohol Abuse** 24(1): 37-60.
- Peters, R.H., and Schonfeld, L. (1993). Determinants of recent substance abuse among jail inmates referred for treatment. **Journal of Drug Issues** 23 (1): 101-118.
- Rotgers, F., Keller, D.S., and Morgenstern, J. (Eds.) (1996). **Treating substance abuse: theory and technique**. Guildford Press, New York.
- Wallace, B.C. (1989). Psychological and environmental determinants of relapse in crack cocaine smokers. **Journal of Substance Abuse Treatment** 6: 95-106.

Table 1

Mean (SD) GF and DASS Scores for Relapse and Time of Testing.

Measure	Relapse	Time of Testing
General Functioning*	30.53 (8.25)	28.16 (7.75)
DASS Depression*	28.24 (12.46)	11.73 (10.56)
DASS Anxiety*	23.24 (13.96)	9.13 (9.68)
DASS Stress*	30.02 (10.69)	12.83 (10.30)

* p = .0001

Table 2

Relationship Status of Drug Groups

Drug Group	Relationship Status				
	Married	De facto	Single	Girlfriend/ Boyfriend	Separated/ Divorced
Amphetamine	2.3%	4.7%	81.4%	4.7%	7.0%
Alcohol	15.2%	12.1%	18.2%	6.1%	48.5%
Heroin	0%	4.3%	82.6%	5.1%	8.7%

We hereby confirm that

- a) this material has not been published elsewhere
- b) this paper is not currently being considered for publication elsewhere
- c) both of us have been personally and substantially involved in the work leading to this paper and hold ourselves jointly and individually responsible for its content
- d) the relevant ethical safeguards have been met with regards to the confidentiality and consent of the patients involved in the research
- e) this project was not funded by any grant
- f) this project was approved by the Bond University Human Research Ethics Committee and thus met national NHMRC guidelines for research ethics with human participants.

Sincerely,

Melissa Hammerbacher and Michael Lyvers